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ABSTRACT

Designed to promote an institutional environment in which research activities and perspectives are integral to the infrastructure of the community college, this compilation of articles presents strategies for developing and strengthening links between research and decision making. Following a brief introduction to the role of the Community College League of California (CCLC) Commission on Research's efforts to promote research, the results of a statewide discussion of the research pervasive environment held during the CCLC's 1990 annual research conference are summarized. Next, "Empowering Research," by Robert Barr, compares two modes of research: academic research which asks "Why is there a problem?" and empowering research which asks "How can the problem be solved?" "Creating the Link Between Research, Policy, and Programs," by Julie Slark, describes four strategies for making institutional research more useful. "Alternative Research Agendas for Creating a Research Pervasive Environment," by Linda Umbdenstock, describes three institutional research agendas and the types of research environments they produce. "Creating Institutional Research Users," by Merrilee R. Lewis, describes the role of the department, the institutional research committee, and the research and planning office in creating a research pervasive environment. The final essay, "The Process of Change: Integrating Research into the Organization," by Curt McCarty,, examines the nature of innovation, change, and organizational decision making. The names and institutional affiliations of the CCLC staff and directorship are attached. (JMC)

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Creating a Research Pervasive Environment

Community College League of California

Commission on Research

September 1990

Cindra J. Smith
Editor

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Creating a Research Pervasive Environment

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Commission on Research
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INTRODUCTION

Imagine the year is 2000, the place is Any Community College in California: research as a specialty has outlived its useful life. All staff are engaged in conducting and utilizing research in their day-to-day professional activities. This is the institutional climate that this paper attempts to promote.

As the necessity for research is increasing, one can already see more community college staff participating in research in order to be more effective in their professions. Examples include counselors conducting matriculation evaluations and faculty involved in classroom-based research.

The earlier Commission on Research issues paper "Institutional Research for Decision-Making and Accountability in California Community Colleges" (November, 1988) described the many types of community college research and its potential for effective decision-making. This paper presents strategies for developing and strengthening viable links between research and decision-making. The writers propose the notion that a "research pervasive environment", one in which research activities and perspectives are integral to the infrastructure of the college, is the goal.

The writers have approached this topic from the perspectives of their own college experiences and written the chapters that follow. This topic has been actively addressed at several Commission on Research meetings, Commission sub-group meetings, during conference presentations, and by various other organizations including LARC and SCCCIRA. It is an emerging and evolutionary topic, one which has generated lengthy discussions each time it is raised, perhaps because using research findings has in the past been problematic.

This paper is in the form of a mini-journal, to be used primarily as a genesis for discussion. The final statewide discussion of a research pervasive environment occurred at the 1990 Annual Reseach Conference: the results of which are outlined in the first chapter. It is hoped that the articles and perspectives will grow in number, breadth, and extent of development as the concept of a research pervasive environment is addressed and matures. The Commission on Research encourages readers to share their ideas and submit articles for additional papers we hope to publish in the future.

Julie Slark
Rancho Santiago

DISCUSSION RESPONSES, ANNUAL RESEARCH CONFERENCE, APRIL, 1990

The authors participated in a panel discussion, presenting different ideas and strategies for creating a research pervasive environment. The initial airing of this concept of a research pervasive environment took place at the April, 1990, Commission on Research annual conference. Participants of the session were asked to describe, on a 3" x 5" index card, their own definition of a research pervasive environment and how they would create one. Those responses follow, and their use here demonstrates the interactive intent of this paper. We hope you will use the paper to begin defining such an environment for your institution and to develop strategies for creating it.

"How would you describe a research pervasive environment?"

- Strong faculty and administrative support
- High level of awareness of current issues, both in the institution and in the world in general, and the implications for change in the institution
- A mechanism to distribute research information to staff in a way they find useful - e.g., newsletter that talks about institutional effectiveness
- A research pervasive environment is participatory - all segments have access to information and ability to enter the process (Faculty)
- Respect for research vs. fear of and misunderstanding
- Mentors/groups to help formulate projects and interpret results
- Assistance with collection of data and analysis
- Assessment is being conducted so data can be collected - awareness that information needs to be collected for some form of evaluation
- Genuine curiosity regarding what kinds of students are being served and how to serve them better (FT Institutional Researcher)
- All/most offices want to know impact/results of their work and are willing to support research efforts
- Wide-spread belief on campus that research is worth funding and effort
- Research is used as an important component of the policymaking/decision-making process
- Informed
- Synergistic

- Shared sense of relevant issues
- Faculty and administrators want to look at the data before planning or decision-making
- Utilization of student, faculty and campus information by different constituencies to learn about or strengthen programs or the college as a whole
- Trust
- Faculty openness to understanding, and applicability of institutional research
- Interest in improving, learning, teaching by all
- A faculty interested in understanding the demographics/characteristics of the students
- Faculty involvement and support
- An environment where research is valued and persons other than the researchers are doing research
- The institution has a full-time research staff person who can provide research design and "how-to" support and consultation to a wide range of faculty, administration and staff who wish to conduct program-specific or institutional research
- Recruit and convert "believers" from all areas of campus - classified, academic, student services, etc., and infiltrate them into important committees such as Counseling, Staff Development, Senate, etc.
- Staff (admin., faculty, classified) know what projects are being carried out, by whom, general findings, and personalized implications, if any
- Faculty and administrators with a strong commitment for improving their institution -- (Counselor)
- Faculty with concerns regarding effectiveness of instruction
- An interest in what is, what should be, and what direction is needed for change
- Use of "brainstorming" to keep quality and quantity of research topics/questions open to change and modification
- The encouragement of questioning - criticalness
- A sophisticated (district) computerized (data) system with connection to each campus

"What are some strategies that contribute to a research pervasive environment?"

- Conduct studies on student trends and recommend changes as indicated (Matriculation Coordinator)
- Consistent evaluation and analysis of projects at all levels and in all areas
- Research results need to appear in practical application. Collecting is not enough (Faculty)
- Anticipate information, needs, and identify ways of answering questions (Research Analyst)
- Meet with faculty/administration and help them to understand a new definition of research - not just ethnographic, but non-parametric and the idea of replicability

- Submit statistics to key decision-makers showing the bleakness of a situation (Counselor)

- Facilitate participation in research by faculty, staff, and students. How? By doing collaborative projects (Director of Institutional Research)

- Level the information playing field by issuing descriptive and analytical reports, and enlist cooperative research projects between institutional research (IR) and faculty, staff and administration

- As a district-based research analyst - spending more time interacting with faculty would be the most important (Full-time Director IR)

- Establish a research committee which includes faculty, administration and students, etc.

- Involve student participants

- Research unit maintain high visibility to faculty. Run pilot research projects with interested faculty as models for college-wide implementation. Development and marketing of classroom-based research models. Increase research office staffing in order to become more involved in a wider range of projects (Research analyst)

- Ideal and planned for next year: I'd hire a researcher for my college (we have only a district researcher). Actual: I distribute institutional effectiveness surveys, analyze and report surveys to College. (President)

- Provide encouragement and feasible funding (Trustee)

- Hire a full-time director of research! - The hiring process itself has and is promoting awareness of research needs/deficiency, significance/importance

- As a state policymaker, I would want to ensure that each campus have sufficient resources (staffing and funding) to both conduct research and use the results for planning and program improvement

- Encourage significant research projects

- Development of discussion groups/town meeting to discuss major campus issues -- (1/3 of a Researcher Assistant Dean, Institutional Development)

- Facilitate open discussion by recognizing contributions to research questions by all facets of the CC community - students, faculty, etc.

- Organize an on-going Forum Series (one per month, etc.), open to all staff, at which people who have conducted research studies can present their results and their practical implementation for improving institutional services to students

- Disseminate studies and information (Assistant Dean of Instruction)

- Promote through staff development activities, disciplinary division activities

- Assure that the results of research are widely disseminated to the campus community

- Periodic newsletter from my office disseminating information on:

    1) What's going on on campus
    2) What's going on in California
    3) How are things nationally
    4) Application for specific areas

- Develop and implement a three-pronged informational/promotional campaign about the process and usefulness of research aimed at administrators, faculty, students (Full-time Researcher)
- Present a class on classroom-based research (Librarian/Instructor/Researcher)
- Staff development for classroom research (Instructor/Program Director)
- Go back to teaching full-time and concentrate on classroom-based research (½ Teaching / ½ Research)
- Provide assistance with projects as a mentor or part of group (Assessment)

Empowering Research

By Robert Barr
Palomar College

Since a research pervasive environment is based upon research, it makes sense to inquire about the types of research that would be the most useful. And since research can involve explanations at various levels, it makes sense to distinguish these levels so that the most appropriate level is used in a given situation.

This essay will distinguish two types and two levels of research. One type of research is more useful for colleges and its members than the other as a basis for decisions and action. The interaction of the two levels of research with the two types of research produces four quite different research questions. These distinctions and their interactions will be illustrated by aspects of research on student dropout.

Research may be divided into two types, empowering research and (for lack of a better name) academic research. It is empowering research that can be expected to be most useful to college decision-makers, be they governing board members, administrators, or faculty and other staff.

The two types of research differ in several ways (see Figure 1). First, each type asks a different question. Academic research asks *why* something is the way it is or behaves the way it behaves. For example, the research literature on school and college student dropout has been basically academic in nature since its fundamental research question has been 'Why do students drop out of school/college?' Research on learning and teaching might ask, 'Why aren't students learning?' or 'Why does this method work better than that method?'

The why question of academic research contrasts with the *how* question of empowering research. Empowering research seeks an answer to the question of *how* a particular individual or organization (an agent) can produce a specified result. Empowering research is explicitly and fundamentally action oriented. It wants to know how a result can be accomplished, rather than why things are the way they are. For example, empowering research on student dropout might ask, 'How can a student be enabled to persist in college?'

Figure 1

Academic vs. Empowering Research

Academic Research	Empowering Research
Asks "Why?"	Ask "How?"
Has an Objective Perspective	Has a Subjective Perspective
Focuses on Causes	Focuses on Responsibility
Involves Explanation	Involves Empowerment

It might seem at first, say in connection with student dropout research, that the distinction between why and how research questions is not substantial. After all, much of the research in student dropout that could be considered academic research has been motivated by a desire to determine how to keep students in school or college. While this is true, nevertheless, the form the research question takes, explicitly or implicitly, in contrast to the motivation for the research, affects the structure and nature of the research and its ultimate usefulness to decision-makers. This should become clearer with the examination of other dimensions of difference between empowering and academic research.

The second way in which empowering and academic research differ is that academic research attempts to be objective, while empowering research is admittedly and necessarily subjective. Academic research attempts to take a perspective that is *outside* or above, as it were, the system or phenomena being studied. Empowering research takes up a perspective *within* the system being studied. In particular, it takes up the perspective of the agent to be empowered and considers the characteristics and circumstances of that agent, and the particular result to be produced by that agent.

Suppose, for example, that a college wishes to retain a higher percentage of its entering students to graduation. Academic research, from its outside objective perspective, has shown that student dropout is related to ethnicity, parents' educational attainment, socioeconomic status, personality and other characteristics of the student. Yet while these correlates are valid and may in a sense explain student dropout, such explanations don't seem to have empowered colleges to retain more students. They only seem to explain why they are leaving.

Empowering research sees this issue from the point of view of the college, taking into account its characteristics and circumstances and its desire to retain more students. From this subjective perspective, variables are classified as within or outside the college's control. If a variable is not within the college's control, it is considered not directly relevant to the research. For example, ethnicity would not be directly relevant because knowing ethnicity is related to persistence doesn't directly empower a college to improve its retention rate unless it is prepared not to admit those from ethnic groups with lower persistence rates.

Consequently, empowering research searches for variables within the agent's control that affect student retention. Thus, if Black students drop out at a greater rate than White students, empowering research wants to know what it is within the college's control - in short, what it is about the college - that explains or causes this. Since the dropout rate of Black students is a function of the *interaction* of the characteristics of Blacks and the characteristics of the college - a given college will affect different students differently and different colleges will affect a given student differently - student characteristics are not irrelevant to empowering retention research. While they are not directly relevant, they are indirectly quite relevant.

Empowering retention research seeks to learn how the college's controllable variables affect its particular kind of students. Thus, you might say that empowering research seeks to learn how to fix the college, rather than how to fix the student. It asks what is it about the college that results in Blacks dropping out faster than Whites, and how can it be fixed, rather than what is it about Black students that explains their higher dropout rate, and how can the college help them.

The third way in which empowering and academic research differ is that empowering research focuses on responsibility while academic research focuses on causes. An agent empowers itself with respect to some problem by taking responsibility for it. For example, a college might assume responsibility for its low student retention rates. Note that while it is possible to assign blame with the word 'responsibility', as in accusing someone of being responsible for an accident, the sense of responsibility intended here does not include blame or its companion, shame.

In order to be empowered, an agent must take, or assume, responsibility for a problem or circumstance. Assuming responsibility, in both a logical and practical sense, opens for exploration a domain of relationships between the agent and the problem that might otherwise go entirely unnoticed.

A college desiring to reduce student attrition can simply and profoundly empower itself to do so by assuming responsibility for student dropout and by conceptualizing itself as responsible for, perhaps even the cause of, student dropout. If an agent can be seen as a cause of a problem, it thereby has the power to affect the problem and is thus empowered with respect to it.

A college's assumption of responsibility for its student attrition rate does not imply that students are not responsible for their own success in school. The logic of responsibility is different from the logic of objective causes. An agent is responsible for something to the degree that the agent is willing to assume responsibility for it. The greater the assumption of responsibility, the greater the power the agent will discover it has to transform or change the situation.

An inspiring example of this self-fulfilling dynamic is Dr. Martin Luther King, Jr. He declared, and acted consistently with his declaration, that he would be responsible for realizing the dream that men and women not be judged by the color of their skin, but only by the quality of their character. This declaration deprived no one else of responsibility. In fact, it inspired others to be responsible for the same dream. Likewise, a college can declare itself responsible for its attrition rate, and at the same time, urge students to accept responsibility for their choices and success.

Such logic cannot be incorporated within academic research. In fact, responsibility in any form is excluded from academic research because such research only specifies causes. Causes cannot be responsible for their effects; only human beings and human organizations can. It has been argued, in fact, that the emergence of scientific academic explanations for human phenomena has coincided with a decline in acknowledgement of personal and corporate responsibility. Using objective scientific explanations, people have assigned their undesirable behavior or effects to causes outside themselves in a manner akin to the claim that "the devil made me do it".

It is interesting to note, in this connection, a general pattern in the literature on dropping out. Those who work for schools -- administrators and teachers -- tend to suggest that student-related characteristics explain drop out, while dropouts themselves suggest that it is school and teacher characteristics that explain their leaving. Each blames the other. Perhaps neither accepts responsibility.

A few years ago, an attrition study of a large public urban school district was released by an independent research group. A school district official's response to that study provides an example of a disempowering stance. The study reported an enrollment ratio attrition rate of 53% for the 1980 freshman class over their four years of high school. The official, described as the director of the district's dropout-prevention program, was quoted as saying, "I've been dealing with dropouts for 20 years, and I think the reasons for dropping out are mostly correlated with problems at home. The best way to improve education for kids is to have parents educated." However true this may be, the stance implicit in this official's response disempowers him and his district from preventing dropout and lowering attrition rates. The "reasons", after all, for dropping out are outside the district's control.

Fourth and finally, empowering and academic research differ in that empowering research seeks to empower while academic research seeks to explain and predict. Empowering research seeks to understand the agent and its characteristics and circumstances in a way that empowers it to produce a specific result. Empowerment, in a direct sense, is irrelevant to academic research. It seeks to explain something.

Both types of research are valid and useful in their own domains. The test of academic research is whether it has discovered the truth. The test of empowering research is whether it has discovered what works. Successful empowering dropout research discovers what *reduces* student attrition, not merely what explains why students drop out.

In addition to conducting one of these two types of research, researchers in a research pervasive environment can make use of the distinction between levels of research to empower themselves, their institution, and others to produce results. Research may be conducted at the individual level, or it may be conducted at the organizational or system level.

In the case of student dropout research, for example, research at the individual level concerns the student's *choice* to persist or drop out. On the other hand, dropout research at the organizational level concerns the college's attrition *rate*. While the variables of choice and rate are obviously related, the distinction is important. Actions and theories appropriate for one level are not usually appropriate at another.

Figure 2 illustrates the interaction of the distinctions between types and levels of research in terms of four basic student dropout research questions. Academic research at the individual level asks, 'Why does a student drop out?' Possible answers to this question include the whole range of student characteristics such as ethnicity and socioeconomic background. Empowering research at the individual level asks, 'How can individual students be empowered to stay in college?' Possible answers include courses in 'How to Be a Master Student'. Academic research at the organizational or system level asks, 'Why does this college have this attrition rate?' Possible answers to this question include the quality of students admitted as represented by SAT scores and the ethnic and socioeconomic makeup of the student body. Finally, empowering research at the system level asks, 'How can this college decrease its dropout rate?' Possible answers include the quality of learning and teaching that occurs in the classroom and the ability of faculty to relate effectively to students of diverse ethnic backgrounds.

For the most part, the research literature on dropout has consisted almost exclusively of academic explanations at the individual level. Advice to students often takes the perspective of empowering an individual student to persist. However, there has been little substantive research in this area. Within the past decade, researchers have increasingly turned their attention to academic explanations at the system level and more recently, some researchers and commentators have concerned themselves with empowering schools and colleges to improve their dropout rates. The latter researchers have proposed theories that involve an "interactive" relationship between the system level and the individual level in which each level has responsibilities for and effects on the other.

Figure 2

Four Student Dropout Research Questions

		Types of Research	
		Academic	**Empowering**
Levels of Research	**Individual (Student)**	Why does a student drop out?	How can a student be anabled to stay in school?
	System (College)	Why does a college have this dropout rate?	How can a college decrease its dropout rate?

Generally, researchers of student attrition have been unaware of distinctions between levels and types of research and have often produced results confusing to readers by shifting unconsciously among them. For example, a research project may be conducted with the intent to assist colleges in retaining students but the theoretical structure and findings are couched in academic terms, leaving little in the findings that empowers colleges to retain more students. Consequently, many studies leave the impression that little can be done by colleges to retain more students to graduation since so much of what causes it is outside the college's control. For this reason, much of the research on student attrition is of little utility in preventing it.

The same fate may befall research for the sake of a wide variety of institutional and educational issues, unless researchers at community college campuses are aware of and make use of the distinctions between types and levels of research.

Creating the Link Between Research, Policy, and Programs

By Julie Slark
Rancho Santiago College

> *"You are valuable to your organization only as you recognize the relation of your work to that of your associates."* Bill Stewart, Chancellor, State Center CCD

One quality that distinguishes *institutional* research from research without that adjective is that institutional research occurs within the political, organizational, and social context of an institution. It does not stand alone or occur externally, and its product is not represented solely by a document of research findings. Rather institutional research is an institutional and organizational process. The most successful, that is, *useful* institutional research will occur in an environment where the research process and other institutional processes are inextricably entwined. The successful institutional researcher appreciates the political nature of organizations. It is not enough to be skilled in research; one must also create and maintain the link between research, and policy, and programs.

Students of policy analysis acknowledge that policy decisions are rarely made solely as a result of a single research finding. Political, financial, and value issues are additional considerations, and the savvy institutional research administrator assists in creating a balance of perspectives for decision-making. Institutional research cannot remain value-free. As an organizational process in an educational institution, its highest priority is to enhance student success. This is a *value* which precludes institutional research in an educational environment from remaining distinct from, aloof, and external to other educational processes.

Most would agree that the priorities of institutional research programs are the same as those of all educational programs and that the ultimate aim of institutional research is to influence policy favorably for student success. How to create the link between the research and educational programs remains a challenge. What are some critical strategies that can be practically employed by colleges and research administrators to form this connection? Some basic strategies are suggested below. At their core is the concept that research is an integral part of all college planning processes.

Research and evaluation can and should be conducted by all professional college staff as a regular part of their program responsibilities. Assessment and evaluation are ingredients of the P-I-E (Planning, Implementation, Evaluation) cycle. Even colleges that have self-contained comprehensive institutional research programs are not able to conduct all of the research needed to ensure sound program planning, student success, and

efficient administration in today's rational decision-making environment. Professional researchers, when present, can serve to encourage, train, coordinate, and lead others engaged in research, but seldom is adequate staffing available to alleviate others from this responsibility. In fact, it would not be desirable for all research activities to be conducted by only a few.

Research findings are more likely to be used if a maximum number of individuals are involved in their development and can, therefore, "own" the research. College staff and committees should be active in initiating questions, designing research, conducting research, analyzing findings, identifying implications, disseminating results, and implementing resultant programs and program modifications. Currently, for example, most California Community College faculty and staff are developing plans for staff development expansion, matriculation programs, and institutional effectiveness assessment. Each of these activities includes a major mandated evaluation component, which needs to be addressed at the initial planning stages when program goals are being identified. Programs developed in this type of an environment benefit because they are designed with specific and realistic objectives in mind.

Whether or not a college has an active institutional research office, widely distributing research responsibilities enhances a research-pervasive environment. Faculty can be allocated reassigned time to conduct special research studies needed by the college, and non-teaching support staff can also be given such special assignments. This approach utilizes the program-specific expertise of those reassigned staff for research and also provides staff development, new professional challenges, and revitalization for the reassigned staff, who later will more likely be research-aware.

The ability to identify the relationship between research needs and activities, information, issues, and programs is a valuable art and a necessary practice for creating linkages between policy and research. The institutional researcher should fulfill the role of "proactive connector and translator", explicitly identifying the research perspective and its value as it relates to an issue. California Community Colleges are all facing many of the same challenges: the new "minority majority," collegial governance, staff development, affirmative action for staff, planning, and student retention, to name a few. But colleges, fortunately, select unique paths in addressing these issues. For some, research and evaluation are active components of these activities, and for some they are not. Take collegial governance; some colleges have conducted "climate" surveys of staff on a regular basis in order to monitor attitudes, plan modifications necessary for their governance structure, and assess progress resulting from those modifications. To address the new minority majority, research-oriented colleges are examining the adequacy of student access, and their progress in facilitating student success with various groups of students, and are encouraging faculty classroom research and assessment techniques in order to maximize learning. For staff development planning and evaluation, more can be done than filling out "happy sheets" after a session; long-term impacts of staff development programs upon staff and student performance *can* be measured. To increase student retention, we need to study not just characteristics of dropouts, but *when* attrition occurs and characteristics of the college that contribute to or detract from retention.

To know *how* to ask the right research questions to maximize program effectiveness is indeed a contributing factor to a research pervasive environment and a skill that can be learned with experience, brainstorming, and the pooling of knowledge. And once data is collected, transforming it into useful information is an important step in creating links between planning and evaluation activities. Put in another context:

> Says he to she: "Evaluators make better lovers because they know how to assess their performance to improve it."
> Says she to he: "Knowledge is as knowledge does. It's not the knowing, but the doing, that matters in the end." From Poor Halcolm's Almanac

In our colleges, identifying questions and implications is best done cooperatively with staff from a combination of involved programs. Researchers alone or program staff alone are not usually able to extract all of the implications of program-related data. Using group processes that actively seek multiple perspectives in identifying both research questions and implications, in contrast to "turf perspectives", will contribute to constructive problem-solving and research utility. Multiple perspectives and collaborative thinking are "musts".

In conclusion, the best institutional research program is integrated into all processes of the college, as opposed to an independent activity occurring on the fringe. The research process itself becomes a forum from which programs and policies emerge, and thus the link is created between research and programs.

Alternative Research Agendas for Creating a Research Pervasive Environment

By Linda Umbdenstock
Rio Hondo College

INTRODUCTION

If research is to have a pervasive influence in the community college environment, both the mindset that research brings to the campus community and the role research can play should be better understood and appreciated. Expanding our ideas of the purposes of research, its methods and those involved in it turns what could be a mechanistic function into a vital, organic part of the college. One vehicle that can help expand these ideas is the research agenda -- whether formalized or implicit.

Let us start with a basic notion of research, one which can be widely shared, of research as an honest asking of a question and a willingness to pursue a complex answer. We typically think of traditional research as a body of finely honed questions (indexed topics, compendia of arranged data), methods (search strategies, research designs) and tools (statistics, survey instruments, etc.). On the other hand, there are also emerging questions asked from different experiences, other ways of eliciting the answers, and new references for interpreting the meaning of a given set of systematically gathered information. In the first instance, the professional expertise of trained and experienced researchers bring a kind of detached perspective to issues. The second opens the search to everyone who cares about an issue to engage in a dialogue in which different points of view are welcome. The very framing of their questions sets a path of discovery and basis for action.

The research agenda in a college can bring both approaches to research together and provide a focus for action. Like any agenda, it is a kind of "planned program". It documents what we think we're doing. There should be an understanding of how items get on it, and what is on it, who's in control -- however formalized or implicit the agenda is. Decisions about priorities are more easily understood.

Different kinds of research pervasive environments result from different kinds of agendas. Three examples (fictionalized) of agendas illustrate this.

A STRATEGIC AGENDA; A FUTURE-FOCUSED APPROACH

A strategic agenda is an agenda developed from a systematic planning perspective. It focuses on long-range goals and plans, building upon current knowledge.

Consider Previously-Stuck-in-the-Mud College which is examining student demographic changes, aging physical facilities, a vulnerable economic base in its community, and a status quo that except for Proposition 13, has been relatively constant. In order to address these challenges, planning is now the focal activity of all staff groups. The college's planning group identifies the research questions to pursue. Do the offerings promote the opportunities sought by the changing balance of older day students and degree-oriented night students? Can the classroom space of the college support the projected 25% increase in students? Studies were designed to respond to the questions. The planning group looked at trends, analyzed patterns, and developed opinion questionnaires and program evaluations. Some were "quick and dirty" studies using available, although inadequate, data as a start; others were multi-year projects which monitored trends and added increasingly complex assessments.

The shared process and shared information served as a basis of making both adjustments and major changes in program development, budgeting process, and marketing strategy. The systematic approach and explicit agenda promoted quick responses. The more adept the college became in planning and research, the more its policies, programs, and operations were guided by sophisticated, future-oriented appraisals of needs and opportunities.

The research pervasive environment which results is one in which many research projects are developed and used by staff as part of their normal way of doing business. The relationship of these projects to the ongoing overall direction of the college, however, is clear to all. A process exists to establish project priorities which are supported by all and to ensure coordination of resources.

A PRAGMATIC AGENDA: THE BURNING ISSUE APPROACH

A pragmatic agenda is driven by current issues and focuses on fast results and analysis for the sake of action. It is developed by what members of the college community want to know at any point in time.

The burning issue on Bonfire Campus was, "Should the academic calendar be changed so that students will not have a high drop rate after the winter holiday break?" Some were sure this was a way to have fewer days and less responsibility for teaching, others thought that it would spur better teaching and learning, others were convinced that the college would lose ADA from an unfamiliar or inconvenient calendar, yet others felt that students would get cheated of precious content. Administrators, faculty, trustees, and students had to find mutually acceptable language and criteria by which answer the question. The process allowed for better understanding of the issues and better preparation for the transition to a new calendar. Several studies identified who was likely to be affected most and how to offset the negatives.

The next burning issue was how can the college increase its number of students who transfer. Some were sure it was a problem of inadequate counseling, others of unprepared or unrealistic students, others that academics were so boring that high drop rates were the problem. The burning issue described previously led to a group being able to formulate the question in neutral terms, gather longitudinal and comparative data, design an intersegmental study on the role of math and writing skills, set some realistic target goals for the next several years, and design a multi-component program which specified counselor, teacher, student roles, and funded activities to match the findings.

And in the meanwhile, other fires were going on, such as, "Should the bookstore have open shelves so students can choose their courses from books?" "Do students who use labs more do better?" The pragmatic approach is not systematic: the issues being addressed are important to those asking the question but may or may not be connected to the overall mission of the college. This approach is playing with fire. While it is possible to spark a bonfire of renewed interest on campus, the campus is also prone to brushfires which can easily sweep partisan interests into raging infernos. The agenda is often implicit and tricky to manage

The research pervasive environment which results tends to be "market-based". That is, while everyone is involved in research, and decisions are made based on information, the results of studies are not necessarily connected to an overall planning process. The "forces at play" are active, but difficult to coordinate. The agenda has a moving set of priorities and short-term time frame.

AN ORGANIC AGENDA (A TRANSFORMATIONAL APPROACH)

An organic agenda has a developmental premise: it is purpose and context driven. It deals with an existing set of opportunities and circumstances to be connected and used synergistically to promote more appropriate directions and relationships.

At State Fair College, three things came together: a new researcher with little good data to work with, a group of faculty, staff, and administrators on campus who saw the need to refocus on students rather than on campus politics, and an opportunity to apply for a small grant for a study. The study involved faculty using a structured interview technique with high risk students and former students (identified from the little data available) to examine retention issues. The group designed the study; even the definitions of "failure", "success", and "high-risk student" were debated at every stage of the process. Alternate models of interpretation were brought to bear on the collected data which led to deeper levels of discussion, fostered numerous subsequent studies, expanded classroom assessment concepts, and promoted a matriculation model with early intervention. Several years later, the group even reexamined the original data from yet another perspective. The specific method of dialogue and peer leadership continued to develop. The work of the college researcher and the activities of the lay-researchers jointly led to questioning premises about the student and the nature of teaching and learning. Approaches to these issues transformed the entire college into an inquiring community of learners.

The organic agenda uses research as community building and part of the community life of the college. Generating consensus and documenting the evolution of the agenda help to focus priorities. It can raise awareness through some wider organizational processes in planning, policy, development, and change. It can create a vehicle for mainstreaming and communicating findings and implications for action. It can link the contributions of various professional roles to planning and action, it can diffuse a overly political approach to problem-solving, it can reformulate traditional premises and suggest alternate frameworks of interpretation more appropriate to new voices and new conditions.

The research pervasive environment which results is one in which people gain a comfort level with mutual challenge and may assume a high level of risk in trying systematic (research-based) innovations, learning from them, and increasing the sophistication of their evolving agenda.

SUMMARY

There are many permutations of these and other agendas and strategies depending on the history, characteristics, and culture of any given college. The discussion of "what do we want to know" and more importantly, "why", shapes meaningful activity. Explicit agendas that involve all segments of the campus community in their development facilitate the creation of a research pervasive environment.

Creating Institutional Research Users

By Merrilee R. Lewis
San Joaquin Delta College

> *Institutional decision making involves problem-solving, establishing missions, goals and objectives, policy making and developing short and long range institutional plans. Institutional research identifies and gathers information about needs, solutions, implementation and possible problems; consequently, the key function of institutional research is to provide decision-making information at every stage.* (**Institutional Research for Decision-Making and Accountability in California Community Colleges.** Commission on Research, California Association of Community Colleges. November, 1988.)

RESEARCH USERS AND COLLABORATORS

Institutional research requires the collaboration of many different people. Successful collaboration produces an agreement on the research design and the research purpose. When others collaborate in the research process, they are more likely to use the results of the effort to effect change, thereby increasing the number of users of research.

Collaborators can include a variety of people, but most frequently they include faculty, the research office staff, and the administrative staff and computer services. Sometimes students are brought into the process, and often community members assist in research, particularly advisory committees. While members of the Board of Trustees are generally users, they may become collaborators in some circumstances such as planning. Board members are vitally interested in the results of research, particularly as it affects policy and fiscal decisions. Often board members will pose questions that will require research, such as how are students moving into and through the college, or how well are students being served. Collaborators work together to design the research questions, assist in the research design, assist in data collection and analysis, review their research findings and applications, and suggest and implement change based upon the research findings. When collaborators are introduced early in the process, research tends to be viewed as practical, useful and non-threatening. Users benefit from research results when they are presented in a readable format which ties the results to possible policy, program, or procedural changes.

STRUCTURING INSTITUTIONAL RESEARCH

The institutional research function can be structured organizationally in at least three different ways: research within a department or division which may be conducted by a group or an individual, a college-wide institutional research committee, or an institutional research and planning office. An institution may have all three types at any one time. One large community college did not have an institutional research office until the Spring of

1989. Prior to that time, institutional research was always done by either a division or a department or an institutional research committee. Despite the lack of an institutional research office, a number of research studies had been done at the college, and the research has been considered a useful tool in decision-making. What is important in any of the three types is to involve as many collaborators as possible and to promote the use of research at all levels to facilitate the establishment of a research pervasive environment.

Department or Divison Research

Department or division research is most likely to affect instructional or student services in a single department or program since the collaborators are users of the research and vitally interested in the results. Examples of this type of research conducted at one college include the Student Athlete Study conducted by the Athletic Division, the Social Science program review conducted by the Social Science Division, the review of the Basic Skills Program conducted by the Communication Skills Division, the review of the drop rate within specific departments in some divisions, and the review of the "Success Within Reach" EOPS project.

While the process may differ slightly in each of the divisions or departments, there are certain key elements. Someone or a group of people are motivated to ask the question, whether it is in response to a mandated program review and/or through a desire to improve services. There is input into the research design and the research questions from faculty, division chairs and deans. A preliminary meeting is usually scheduled with the appropriate faculty group and faculty members are asked to identify research questions. Administrators, including the division chair and dean, and other support personnel such as laboratory assistants participate in the process so that all points of view can be expressed. Faculty members, the dean and/or the division chair and perhaps a group of volunteers generally prepare the initial design. The faculty and division chair plus other interested members review the design. Survey questions are jointly developed and modified as necessary.

Specific tasks are identified and assigned to different individuals, according to people's expertise and the type of tasks. For example, faculty may be asked to distribute surveys in their classrooms. The division chair or dean may supervise data entry, or the computer services area may take responsibility for data extraction. In some cases, a research technician may be available for data entry and preliminary analysis.

Preliminary results are analyzed, usually by those who developed the design. The results are shared, and discussed with the faculty and other collaborators. A report is written as a collaborative effort between two or three people. Faculty and other collaborators review the report, critique it and suggest additional information that should be included. At that time, implications of the research are also discussed. For example, in the Basic Skills Program, an analysis of enrollment, pass rates, and skill growth led to changes in the curriculum in terms of both content and structure. Following acceptance by the collaborators of the final report, results are more widely shared with other administrators, the Academic Senate, and the Board.

Division or department-based research tends to be very useful to the faculty since it relates to curriculum or teaching strategies and the faculty have an investment in the research. Generally, the faculty see their role in this type of research as part of their professional responsibility and are not given extra compensation or reassigned time. One caution with this type of research is that it may be seen as self-serving. To prevent this, there must be an opportunity for a discussion among the users and a willingness of the collaborators to accept feedback. This organizational structure most easily exemplifies a research pervasive environment, as the researcher, the collaborators and the users are generally the same people.

Institutional Research Committee

Some institutional research is based upon recommendations of a college-wide committee. Generally, this kind of research is much broader than division or department-based research since it is likely to effect more than one division or department. Suggestions for research often come from standing committees of the college. A committee recommends a particular research project, and then a subcommittee of faculty, staff, administrators, computer service support personnel and perhaps students is organized. The research questions and design are developed by the subcommittee and submitted to the larger committee for approval. Again the tasks are assigned to particular individuals depending upon their expertise and the type of task.

Results are analyzed and shared, and a report is usually written collaboratively with the subcommittee under the general direction of one of the committee members - often one of the deans. Examples of this type of research include a college-wide study on students who earned "W"s (withdrawals), a college-wide study on prerequisites, and studies validating assessment policies. In the college-wide "W" study, the faculty, the Matriculation Committee, and the Academic Research Committee were all interested in what kinds of grades students were earning at the time they withdrew. The faculty were asked to report the student's grade at the time of withdrawal. According to the teachers, between sixty and seventy percent of the students were earning D's and F's when they withdrew from the class. Based upon this research, the Matriculation Committee suggested further research of students who are leaving the college.

In the prerequisite research, all courses on the general education list for CSU and AA degrees were selected for two semesters, and the performance of students on the assessment tests was correlated with the GPA grade earned in the selected classes. Assessment policies have been developed at the college, and the performance, retention and enrollment patterns of students having particular reading levels are monitored. As a result of this research, plus recommendations from various committees, the college modified its assessment policies. This type of research is very likely to result in a change in an instructional or student service program, or possibly a change in a general college policy or practice.

Again, the motivation of those involved to ask the questions, collaborate on the research, and to use the results is enhanced by a research pervasive environment where research is seen as a routine part of the educational process, rather than an activity separate from daily operation.

Research and Planning Office

Finally, research might be conducted by an institutional research and planning office. This office generally reports to the Superintendent/President or Vice President of a college or district. Often the supervisor of the research office has a particular research agenda. In order for there to be broad acceptance of the research conducted by this office, collaborators are usually required, since their input leads to further acceptance of the research. The process of developing collaborators need not be different than in the structures described above. For example, there could be a standing committee which assists in the development of a research agenda. Committee members might include faculty, staff, administrators, students, and computer support personnel. The agenda could be reviewed by a wider group so that there will be broad understanding of the role of the research office. Alternatively, to facilitate the creation of a research pervasive environment, the agenda for the office could be developed through much consultation and careful listening to the concerns of the college staff and governing board. By involving them in the development of an institutional research agenda, research becomes more a part of their environment.

When the research office conducts research, the task is usually done by the director or the staff from that office, with occasional support from other offices. Research generated by the research office should be able to be used to modify instruction, student services, or general college policies and practices: whether or not it is depends to a large part on how much the research is related to perceived needs. Examples of research conducted by a research and planning office might include a community needs assessment or a salary study comparing the home district to other districts. The research office should be a beneficial resource for committees, divisions or departments who are attempting to design research studies.

VALUING INSTITUTIONAL RESEARCH

Institutional research is of little value if it is not perceived as useful. Institutional research should create users who in turn foster research, ask research questions, and feel comfortable in a "research pervasive environment". When there is a research pervasive environment, suggestions for change are taken seriously and are often implemented. Research is seen as a tool in an evaluation and change process, and though it may at times be threatening, the collaborators accept the research and become research advocates. Institutional research then plays an important role in decision-making, problem-solving and planning.

The Process of Change: Integrating Research Into the Organization

By Curt McCarty
San Diego City College

> *"There is nothing more difficult to take in hand, more perilous to conduct, than to take the lead in the introduction of a new order of things, for the innovation has for enemies all those who have done well under the old conditions and lukewarm defenders in those who may do well under the new" (Machiavelli)*

INTRODUCTION

Creating a research pervasive environment (RPE) is very similar to changing people's behavior about something. It's like getting them to try a product, or to switch from one product to another. The product (or innovation, in this case) is an environment where research is highly valued and used in the decision making process.

Innovation is defined as something perceived as new by an individual or a group. How then do you get someone to change? How do you get an organization to change from something it is comfortable with, to something else? How do you encourage someone to do something or adopt some kind of new behavior? They need to see some benefit. To accomplish this change we must understand four issues and how they interrelate:

- The Attributes of an Innovation
- The Adoption Decision Process
- The Process of Change in an Organization
- People in the Change Process

As you read, when examples are given for implementing the change, think of how they would apply to the research pervasive environment.

INNOVATION ATTRIBUTES

Innovations (such as the creation of an RPE) may be compared using these general attributes, which also affect the speed of the adoption decision process.

Relative Advantage is the extent to which an innovation has a positive benefit over the one which it is replacing. (A calculator is more advantageous than a slide rule and will be adopted at a greater rate.)

Compatibility is the degree to which an innovation is consistent with an individual's existing beliefs, attitudes and behaviors. (Walking is a more compatible exercise activity than weight lifting [for most of us] since most everyone knows how to walk and does it from time to time.) It is positively related to the rate of adoption.

Trialability is how convenient it is to try out an innovation on a small scale. (Small samples of laundry powder enable the person to try it out at home prior to buying a large size box in the store.)

Observability is the degree to which the results of an innovation can be viewed by potential adopters. The greater the observability, the more rapidly the adoption decisions will be made. (A piece of hardware is more visible than the program [software] to run it and speeds the rate of adoption.)

Complexity is the degree that people think the innovation is difficult to use or understand.

In summary, all other things equal, to create a research pervasive environment, you will need to promote it so that it is seen to have the highest relative advantage, compatibility, observability, trialability, and least complexity.

ADOPTION DECISION PROCESS

Research suggests that for any innovation, people pass through a five step process from knowledge, to persuasion, to decision, to implementation, and to confirmation. The time for each step varies.

Knowledge is finding out about the innovation and its potential benefits. *Persuasion* consists of the formation of an opinion (positive or negative) about the innovation. *Decision* occurs when a choice is made to adopt, reject or seek more information. *Implementation* is the action to put an innovation to use. Finally, *confirmation* is the reinforcing of information in order to maintain or reverse the earlier decision.

In summary, to diffuse the innovation of a research pervasive environment, provide whatever information and/or assistance as you can to your colleagues as they evaluate the innovation and move through the knowledge, persuasion, decision, implementation and confirmation stages of the adoption decision process. (For additional examples, refer to section "The Plan", on the next page)

THE NATURE OF CHANGE WITHIN AN ORGANIZATION

"Change is not made without inconvenience...even from worse to better." (Richard Hooker)

Certain characteristics of an organization affect (in a positive or negative way) its acceptance of change. Rogers (1983) lists the following:

Openness - The degree that the system accepts and shares information from the outside world. (The more open - the more likely change will occur.)

Formalization - The rigidity with which rules and procedures are emphasized. (The less formal - the more likely change will occur.)

Complexity - The presence of high levels of skill, knowledge or expertise among the professional staff. (This is a positive relationship and not to be confused with the same name listed under innovation attributes.)

Interconnectedness - The degree that interpersonal networks exist which facilitate communication. The concept is related to openness and is also positive.

Centralization - The degree to which system decision-making is focused in a central body. It is negatively related since a more centralized organization tends to be less susceptible to change.

Slack - The availability of "uncommitted" resources. The more slack, the more opportunity for innovation to occur.

Size - The degree of largeness of the system. There generally is positive relationship to change, but there are many exceptions.

It is important to remember the effects (positive or negative) of these characteristics on the change process. In a very formal, centralized organization with limited discretionary resources that tends to be closed to information from the outside world change is rarely initiated and occurs very slowly. It is also generally uncomfortable for the members. Understand that an organization fitting this stereotype may not exist in the real world, but the characteristics are realistic ways to identify those agencies that might respond favorably or unfavorably to change.

ORGANIZATIONAL DECISION MAKING

There are essentially four types of decisions that an organization can make concerning adoption behavior. They are optional, collective, authority and contingent. *Optional* decisions are those that the individual can make independently of other members of the group (whether or not to take advantage of certain health benefits). *Collective* decisions require a vote from the members, which is followed by joint support (vote supporting a work stoppage). When a decision is made from a position of power or expertise, it is said to be that of an *authority* (i.e., the chairman of computing services has decided that a particular spread sheet program is to be used.) *Contingent* decisions depend on a prior decision. Before a person can adopt a new word processing program, a decision must be made to get a computer.

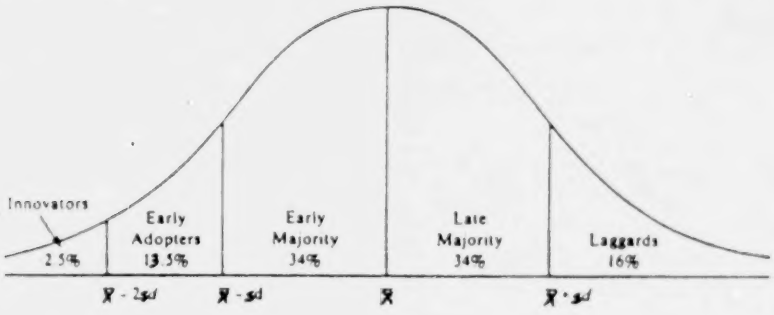
The various decision strategies are presented so that groundwork needed can be done prior to the introduction of the innovation. For example, in order for an RPE to be viable, there must be support from central administration in terms of benefit to the staff for their participation in research activities. The first time that someone introduces a research report that is contrary to the accepted wisdom and is ridiculed or has the research rejected out of hand, will be the last time that person participates in a creation of a research pervasive environment.

PEOPLE IN THE CHANGE PROCESS

> *"Consider how hard it is to change yourself and you'll understand what little chance you have of trying to change others." (Jacob M. Braude)*

Years of research have shown that people's behavior toward change exists on a continuum from early adoption, to late adoption, to not at all. [See Figure 1] (Rogers & Shoemaker 1971). There are those who are the first to try something new and are called *Innovators*. In general, they are few in number and have little influence over the process, except to get it started. *Early Adopters* comprise a somewhat larger group and contain the bulk of the opinion leaders. These people have considerable influence over the change process since they are the ones that others tend to "talk it over with" prior to a decision. A change agent will want to use their "opinion leadership" carefully, or else they can be too closely associated with the change and might lose their status and/or influence. The two groups of *Early and Late Majority* constitute the largest number of people who will adopt; but at a somewhat slower rate. The *Laggards* are the most resistant to change. They also have limited influence in the process. We need to know that these people exist and exert some influence on the process. We must also understand, that people do have thoughtful reasons not to adopt something, and pay attention to these reasons.

Figure 1-
Innovativeness and Adopter Categories



THE PLAN

"A desk is a dangerous place from which to view the world." (John LeCarre)

As the research person (and change agent), you have been given the charge. A new Chief Instructional Officer has been brought in to strengthen the college's instructional program. You have been asked to introduce a research effort and to overcome any resistance that might exist or develop. You and your office are also new to the organization.

One of the first tasks will be to establish your own credibility. Be prepared to take some time reaching your goal. Remember, the institution didn't get to where it is in a day, week, or month, so you're not going to change it overnight. Don't look for or expect miracles. Be satisfied with significant progress. Whatever you do, work within the system. Analyze the problem carefully and clearly state your objectives and set up some reasonable timelines. Monitor the overall progress. Talk to people and let them know what you're doing and elicit their help. Emphasize the advantages, how what you're offering fits right in with what they're already doing, how simple it is to do, how easy it would be for them to try it out. Then assist them in accomplishing their task. The impetus for change has to be supported at the most central part of the administration - from the Chief Executive Officer outward.

Then begins the somewhat slower process of eliciting requests for research activity. This can occur in informal settings (lunch, coffee, etc.) by seizing the opportunity presented when a colleague indicates some researchable need like "I'd like to know why my students...?". You should volunteer to help that person by doing whatever is most helpful, but remain at a reasonable distance so as not to be seen as "taking over". This will accomplish several things. It will provide a needed service, it will help to establish your office and it will enable you to learn who the opinion leaders are so that you know who reasonably represents the "mean" of the opinions formed within the group. Conduct the research and repeat the process with others. This will serve to further enhance the innovation (the research effort) within the organization. It will also validate the original goals and the timeliness with which they were initiated and may have been modified during the project.

This entire effort should be tied to some type of publicity plan. Perhaps the college has a newspaper or staff bulletin or district-wide newsletter. An article or column "rewards" those who produced the research, supports further activity, publishes the results, encourages others to see if "it" works for them and, in general, creates a positive environment to help overcome the resistance of the past. Then, slowly but surely, the word-of-mouth communication begins to persuade others of the benefits of research and/or your office and/or your particular help. Once this process is established, you will need to think about expanding your services to handle the increased requests... which is not an unhappy state of affairs.

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Figure 1 (Rogers, *Diffusion of Innovations*, page 247) Used by permission.

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